1.4 DESCRIPTION OF ALTERNATIVES

1.4.1 Proposed Action

The proposed action is to construct and operate a wind power project located on high open ridge tops between the towns of Kittitas and Vantage at a site located in the Kittitas Valley. The Wild Horse Wind Power Project (the "Project") will include wind turbine generators (WTGs) that will be constructed in rows along the open ridge tops of Whiskey Dick Mountain. The size and number of wind turbines to be used for the Project depends on a number of factors including wind turbine economics and availability at the time of construction. The resulting nameplate capacity of the Project will depend on the final model and nameplate rating of turbine selected. In order to examine the full range of potential impacts from the Project, this Application for Site Certification (ASC) defines and evaluates the full range of possible turbines from the smallest turbines and towers to the tallest turbines and towers. Additionally, a most likely turbine scenario has been studied to evaluate and examine the most likely Project impacts. The Project configurations are summarized as follows:

- Most Likely Scenario: 136 WTGs with 70.5 meter rotors:
  The Most Likely Case scenario represents the most likely Project configuration, using WTGs with a generator nameplate rating of 1.5 MW and a rotor diameter of 70.5 meters. Up to 136 turbines of this size would be used for a total nameplate capacity of 204 MW.

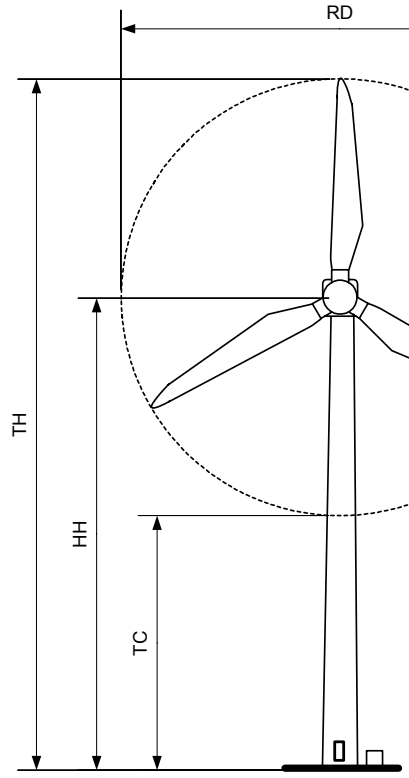
- Small WTG Scenario: 158 WTGs with 60 meter rotors:
  The Small WTG scenario represents a Project configuration that would utilize a larger number of smaller WTGs with 60 meter diameter rotors and a generator nameplate rating of 1 MW. Up to 158 small turbines would be used for a total nameplate capacity of 158 MW.

- Large WTG Scenario: 104 WTGs with 90 meter rotors:
  The Large WTG scenario represents the Project configuration that would utilize fewer, larger capacity WTGs with a generator nameplate rating of 3.0 MW and a 90 meter diameter rotor. Up to 104 large turbines would be used for a total nameplate capacity of 312 MW.

Figure 1.4.1-1 illustrates the range of turbines examined under this ASC which is also summarized in Table 1.4.1-1. The study work performed to support this ASC is similar to that done for transmission line projects which study a defined corridor with various tower or pole sizes. For the Project however, there will not be a mix of turbine sizes, but rather, one consistent size of turbine and tower used. Regardless of the size of turbine used, the Project will occupy a permanent footprint of approximately 165 acres of land.

Table 1.4.1-1 Project Scenario Summary			
	MOST LIKELY Scenario 70.5 m Rotor	**SMALL WTG Scenario 60 meter Rotor**	**LARGE WTG Scenario 90 meter Rotor**
Turbine Nameplate	1.5 MW	1 MW	3 MW
Number of WTGs	136	158	104
Project Nameplate	204 MW	158 MW	312 MW
Total Permanent Footprint Approx.	165 acres	165 acres	165 acres
Miles of Road Approx.	32 miles	32 miles	32 miles

Figure 1.4.1-1 Wind Turbine Dimensions



	MAX	MIN	Dimension
HH	80 m/262 ft.	46 m/151 ft.	Hub Height
RD	90 m/295 ft.	60 m/197 ft.	Rotor Diameter
TC	40 m/131 ft.	15 m/49 ft.	Tip Clearance
TH	125 m/410 ft.	76 m/249 ft.	Tip Height

The facilities, equipment, and features to be installed as part of the Project include:

- approximately 17 miles of new roads,
- improvements to roughly 15 miles of existing roads,
- approximately 27 miles of underground 34.5-kV collection system power lines,
- approximately 2 miles of overhead 34.5-kV collection system power lines,
- approximately 14 miles of overhead 230-kV transmission feeder lines,
- one or two step-up substations,
- one interconnection substation,
- an operations and maintenance (O&M) facility of approximately 5,000 square feet,
- parking area for the O&M facility approximately 300' x 300',
- a visitor's kiosk,
- up to six permanent meteorological towers.

The Project will be constructed across a land area of approximately 8,600 acres in Kittitas County, although the actual permanent facility footprint will comprise approximately 165 acres of land under any of the scenarios. This is because there is no change to the length or width of the Project component footprints, including the roads, substations, O&M facilities, rock quarries, underground or overhead lines, permanent met towers, batch plant, or rock crusher under the different scenarios. Such components comprise the vast majority of acreage impacted by the Project, and because they remain unchanged under all scenarios, the total acreage and construction quantities are very similar under all scenarios. The acreages and construction quantities are very similar under all scenarios because the scenarios utilize the same beginning and end points for each turbine row corridor. For a specific comparison of the relative areas impacted under each scenario, refer to Table 3.1.2-2: Comparison of Area Impacts of the Proposed Scenarios.

Similar to the environmental analysis performed for gas power projects which examine the full range of potential emissions such as SOx, NOx, CO and CO2 from various sizes and types of gas turbines, Applicant has fully analyzed the entire range of potential impacts and described all environmental effects from the full range of sizes and types of wind turbines. Within each Section of Chapter 3 of this ASC, the potential impacts to earth, air, water, wildlife, socioeconomics, public health and safety, and other elements of the environment have been examined for the full range of sizes and numbers of WTGs.

The Applicant requests that the Project be permitted to allow construction and operation within the entire range of turbine size and numbers presented, for which the impacts have been fully analyzed. This will enable the Applicant to choose the best wind turbine for the Project, based on technical and commercial considerations at the time of construction.

1.4.2 Alternatives Considered

1.4.2.1 Project Alternatives

Consideration was given to the following alternatives:

- Alternative power generation technology,
- Alternative wind turbine design,

Details of the consideration of these alternatives and the reasons for their rejection are given in Section 2.3, 'Alternatives'.

1.4.2.2 Site Alternatives

As described in Section 1.2, 'Purpose and Need for the Project and Associated Facilities', the objective of the Wild Horse Wind Power Project is to construct and operate a wind energy generation resource to meet a portion of the projected growing regional demand for new energy resources. The Energy Information Administration projects that total electricity demand would grow between 1.8 and 1.9% per year from 2001 through 2025. The Western Electricity Coordinating Council (WECC) forecasts the 2001-2011 summer peak demand requirement to increase at a compound rate of 2.5% per year (WECC 2002). Based on data published by the Northwest Power and Conservation Council (NWPCC), electricity demand for the Council's four-state Pacific Northwest planning region (Washington, Oregon, Idaho, and Montana) was 20,080 average MW in 2000 (NWPCC 2003).

Washington and the Northwest region face a growing medium and long term demand for power. Many regional utilities are currently seeking to acquire new generating resources to meet their loads. More specifically, several regional utilities, including Avista, Puget Sound Energy (PSE), and PacifiCorp (doing business as Pacific Power in Washington) have all completed detailed studies and demand forecasts of their own systems as part of their Integrated Resource Plan (IRP) or Least Cost Plan (LCP) process with oversight from the WUTC (Washington Utilities and Transportation Commission). As a result of their formal IRP or LCP processes, PSE , PacifiCorp and Avista have issued Requests for Proposals (RFPs) specifically for wind power and/or other renewable resources. Avista is seeking to acquire 50 MW, PSE is seeking to acquire 150 MW and Pacificorp is seeking to acquire 500 MW. There is thus a regional demand for wind generated energy that greatly exceeds the existing regional supply.

The proposed Project is intended to help meet this growing regional demand for renewable, wind-generated electricity.

The Kittitas Valley Wind Power Project is not considered a reasonable alternative to the Wild Horse Project since neither Project, on its own, can meet the forecasted or immediately requested demand for power in the region. Also, neither Project could be increased in size, on its own, to generate the same amount of energy output as can be cost-effectively generated by constructing both projects. Therefore, doubling the size of one project is not a reasonable alternative to constructing both projects.

1.4.2.3 No Action Alternative

Under the No Action Alternative, the Project would not be constructed or operated, and the environmental impacts described in this EIS would not occur. The No Action Alternative assumes that future development would comply with existing zoning requirements for the Project area, which is zoned Commercial Agriculture and Forest and Range. According to the County's zoning code, the Commercial Agriculture zone is dominated by farming, ranching, and rural lifestyles, and permitted uses include residential uses, green houses, and agricultural practices. Permitted uses in the Forest and Range zone include logging, mining, quarrying, and agricultural practices, as well as residential uses (Kittitas County 1991). However, if the proposed Project is not constructed, it is likely that the region's need for power would be addressed by some combination of user-end energy efficiency and conservation measures, by existing power generation sources, or by the development of new renewable and non-renewable generation sources. Base load demand would likely be filled through the expansion of existing, or development of new, thermal generation such as gas-fired combustion turbine technology. Such development could occur at conducive locations throughout the state of Washington.

A base load natural gas-fired combustion turbine would have to generate 67 average MW of energy to replace an equivalent amount of power generated by the Project (204 MW at 33% net capacity). (An average MW or "aMW" is the average amount of energy supplied over a specified period of time, in contrast to "MW," which indicates the maximum or peak output [capacity] that can be supplied for a short period.) Table 2.3.2-1 presents the basic parameters of a hypothetical 67 aMW natural gas-fired combustion turbine.